“We develop automotive technology for cars, trucks, buses and contractors’ machinery in order to achieve safe, sustainable transport. Technologies of the future are active safety systems, lightweight designs, electric vehicles, communication and alternative fuels.”
The main challenges facing the automotive industry are the technological development and innovation. The industry is constantly evolving, driven by a range of factors, including environmental considerations, safety requirements, and the need for new technologies. The automotive industry is particularly focused on:

- Electric vehicles
- Lightweight designs
- Active safety
- Communication

The choice of materials and the design of interior fittings affects both comfort of vehicle drivers and safety. SP performs accredited measurements both in its acoustic laboratories and in the field. We develop the technology, carrying out research in conjunction with industry, in such areas as renewable materials and self-cleaning cle paints and other surface treatments. New legal requirements, such as those governing the use of biofuels, can result in increased interest in vehicle performance and safety systems that can prevent many accidents from occurring at all. We also perform a wide range of tests, evaluations and investigations on vehicles, road surfaces and driving habits for many years. We also offer the potential to improve traffic flows, reduce journey times, increase driver comfort, reduce the number of accidents and reduce fuel consumption, thus also reducing carbon dioxide.

The SP Biofuels competence centre brings together the Group’s resources in the field of production and use of renewable motor fuels. Work is being carried out with national and European partners. The technology of communication between vehicles, and satellite technology. SP develops measuring systems for position, speed and acceleration using GPS. Electric vehicles must not cause high levels of interference. Electric motor drives must not cause electromagnetic compatibility (EMC) problems. The use of biofuels is addressed by the competence centre. Issues regarding the use of biofuels are addressed by the competence centre. The technology of communication between vehicles, and satellite technology. SP develops measuring systems for position, speed and acceleration using GPS. Electric vehicles must not cause high levels of interference. Electric motor drives must not cause electromagnetic compatibility (EMC) problems. The use of biofuels is addressed by the competence centre. Issues regarding the use of biofuels are addressed by the competence centre. The technology of communication between vehicles, and satellite technology. SP develops measuring systems for position, speed and acceleration using GPS. Electric vehicles must not cause high levels of interference. Electric motor drives must not cause electromagnetic compatibility (EMC) problems. The use of biofuels is addressed by the competence centre. Issues regarding the use of biofuels are addressed by the competence centre. The technology of communication between vehicles, and satellite technology. SP develops measuring systems for position, speed and acceleration using GPS. Electric vehicles must not cause high levels of interference. Electric motor drives must not cause electromagnetic compatibility (EMC) problems. The use of biofuels is addressed by the competence centre. Issues regarding the use of biofuels are addressed by the competence centre. The technology of communication between vehicles, and satellite technology. SP develops measuring systems for position, speed and acceleration using GPS. Electric vehicles must not cause high levels of interference. Electric motor drives must not cause electromagnetic compatibility (EMC) problems. The use of biofuels is addressed by the competence centre. In order to meet the automotive industry’s requirements for tests in vehicle interactions with existing and new metal alloys and plastics. The Safe and Reliable Battery Systems team is working on battery systems for electric vehicles. SP is cooperating with the automotive industry and with universities in Sweden in the nationally funded “Safe and reliable battery systems for environmentally friendly vehicles – Development and test methods” project. The aim of the project is to develop safe and reliable battery systems: a part of the work being carried out by SP is developing test methods and guidelines for electrical and fire safety.
Automotive Industry

Sweden’s widest range of services for the automotive industry

SP (Sweden’s largest government research institute for vehicle manufacturers and suppliers) offers a wide range of advanced services to meet the technical challenges of the automotive industry. Our extensive range of services and expertise meet the automotive industry’s increasingly complex technical questions and requirements.

- Action safety
- Lightweight designs
- Electric vehicles
- Communication
- Alternative Fuels

The main challenges facing the automotive industry are the development and introduction of new technologies that will affect the entire automotive industry. New motor fuels present new requirements. One clear trend is that of increased environmental awareness and concern among customers.

- Alternative fuels
- Communication
- Electric vehicles
- Lightweight designs
- Active safety

We offer the potential to improve traffic flows, reduce journey times, increase driver comfort, reduce the number of accidents and reduce fuel consumption, thus also reducing carbon dioxide emissions.

Materials and components

SP’s materials and component expertise is in all areas. We have the competence to develop safe and reliable battery systems for environmentally friendly vehicles. The automotive industry’s requirements are to develop safe and reliable battery systems, with a focus on reducing the amount of harmful substances released in the event of a fire.

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- Materials and components
- Safe and reliable battery systems

Examples of current research projects

- Safe and reliable battery systems

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Automotive electronics

- Electronic and embedded systems provide the basis of almost all new functions in modern vehicles.
- SP can measure and calculate electromagnetic fields (EMF) testing, working with everything from individual components to complete vehicles. Each test can be offered as a technical service under the Swedish Transport Agency.
- Other functional safety evaluations and “functional safety assessments” of components needed for electronic equipment are tested on site to be applicable to equipment in explosive environments.
- The technology of communication between vehicles, and between them and the roadside, is also an area in which we seek to develop the technology, carrying out research in conjunction with European partners.

Noise and vibration

- SP has been developing vibration models for both noise from vehicles, road surfaces and driving aids for many years. We also assess the noise exposure of traffic environments in cities.
- Noise, Vibration and Harshness – NVH – is decisive for the comfort of vehicle drivers. SP performs accredited tests in both its acoustic laboratory and in the field.

Safety systems for vehicles

- SP has extensive expertise and specialist knowledge of both passive safety systems (i.e. those which provide protection when an accident occurs) and active safety systems, which must ensure the risk of an accident occurring and reduce its effects. We develop methods of testing and innovation environments for new safety systems that can prevent many accidents from occurring at all. SP also performs a wide range of tests, evaluations and investigations of the components that form part of passive safety systems.

Fires in vehicles

- The risk of materials and the design of interior fittings affects the fire safety of cars and buses. Fires in trucks can have serious consequences, particularly if they occur in tunnels, where a fire can spread to other vehicles. Vehicles generally carry some form of liquid fuel, and it is important that fire barriers are designed so that they remain intact and do not leak if exposed to fire.
- New fuels present different types of risk. Electrically powered vehicles use high voltage, which can cause effects such as persistent arcs, which in turn could affect electronic materials. Focusing these risks may require a combination of technical expertise and facilities that is provided by SP.

Electric vehicles

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Safe and reliable battery systems

- Safe and reliable battery systems are one of the most important elements of energy supply in the future. Together with green electricity, they form part of the process of achieving the Swedish Transport Agency’s goal of reducing gasoline use by 50% by 2020.
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Electrical safety, fire risks, battery technology and electromagnetic compatibility (EMC) are areas of SP’s work that are helping to solve the automotive industry’s problems.

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SARTRE

SARTRE is an EU project to develop and test new technologies for vehicles that can also be used in road traffic applications. It offers the potential to improve traffic flows, reduce journey times, increase driver comfort, reduce the number of accidents and reduce fuel consumption, thus also reducing carbon dioxide emissions.

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Contact

For more information about our services and expertise, contact us at sp@sp.se or visit our website at www.sp.se.
Sweden’s widest range of services for the automotive industry

SP (Swedish Test and Research Institute) is Sweden’s largest organisation for test and research in the transport sector. Our extensive range of services and expertise meet the automotive industry’s increasing technical demands and requirements. Our close collaboration with industry, in such areas as renewable materials and self-cleaning materials technology is becoming increasingly important in the automotive industry. SP carries out research in close conjunction with industry, in such areas as renewable materials and self-cleaning materials technology.

Our main areas of expertise in automotive materials technology are metallic materials, polymer materials (plastics and rubber), vehicle parts and other surface treatments. New legal requirements, coupled with the rapid rate of technical development, means that materials technology is becoming increasingly important in the automotive industry. SP carries out research in close conjunction with industry, in such areas as renewable materials and self-cleaning materials technology.


text content...
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